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Processing Conditions for Seasoned-Dried Pacific Saury Treated with Liquid Smoke

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Introduction

Among dark fleshed fishes, especially, Pacific saury has not well been used for processing because of its properties of weak tissue and high lipid content. If a simple and modified technique such as liquid smoking method for Pacific saury processing is applied successfully, it could give a lot of advantages on the field of fishery processing. In the aspects of effective utilization of dark fleshed fishes, therefore, we have attempted to process seasoned-dried Pacific saury with commercial liquid smoke. The objectives of this study were to determine optimal processing conditions of seasoned-dried Pacific saury treated with liquid smoke.

Materials and Methods

Materials : Pacific saury, *Cololabis saira*, (28±2cm length, 93±6g weight) were purchased from Myungbo Fisheries Inc. (Changwon, Korea). The liquid smoke used in this study was scansmoke PB 2110 (P. Broste A/S, Denmark, SS).

Processing of seasoned-dried Pacific saury : The processing of seasoned-dried Pacific saury are shown in Fig. 1.

Analysis of proximate composition and histamine contents: The proximate composition were determined by A.O.A.C method (1980). Salt content was determined using salinity analyzer (TM-30D, Takemura Electric Works LTD., Japan). Histamine contents was followed by a method of KSFSN (2000).

Analysis of water activity (Aw), pH, volatile basic nitrogen (VBN), viable cell count and color value : Aw was determined using Digital Water Activity analyzer (Novasina, CH-8808, Pfaffikon, Swiss). The pH was determined using pH meter

(DP-880, DMS, Korea). The contents of VBN was determined by Conway micro-diffusion method (Ministry of Social Welfare of Japan, 1960), and viable cell count by the standard plate count method (Collins and Lyne, 1985). The color value was determined using color difference meter (Minolta, CM-3500d, Japan).

Analysis of thiobarbituric acid (TBA) and peroxide value (POV) : Oil extraction for POV (meq/kg) was followed by the method of Bligh and Dyer (1959). After that, A.O.C.S method (1990) was followed. TBA (mg/kg) was analyzed by steam distillation method (Tarladgis et al., 1960).

Sensory evaluation and statistical analysis: Sensory evaluation was performed by 9 sensory panels, and the scoring method with 9 hedonic scale was used. Statistical analysis was performed by the SPSS system.

Results and Discussion

Optimal conditions for processing of seasoned-dried Pacific saury treated with liquid smoke (T2) were evaluated by physicochemical and microbial experiment and sensory evaluation, comparing with control (C) and treatment I . Two hr of seasoning time was set, and 23 hr of drying time was determined in all samples. Soaking treatment for 1 sec, 8 sec and 1 sec in 5% (v/v) liquid smoke (Scansmoke PB 2110) after 30 min, 4 hr and 22 hr of drying were obtained in T2 product, respectively. The histamine contents in 3 seasoned-dried products were in a range 15.33~26.99 mg/100g. The water activity of 3 seasoned-dried products was 0.719~0.735 range, and the pH of T2 was lower than the others. In the comparison of POV and TBA values among products, the TBA values and POV of T1 and T2 were significantly low compared to C, and also the viable cell counts of T2 was relatively lower than those of the others. In the color values, significant changes were not estimated among products, and in the sensory evaluation for odor, taste and overall acceptance, T2 had relatively higher preference on the whole items.

References

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